An Experimental Study of Three Response Modes in Social Influence Situations

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Technical Report
February, 1963

Prepared Under ONR Contract 816 (12) -
Variables Underlying Group Expectancies and Leadership

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St. Louis

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A unidimensional model of conformity-nonconformity response continues to dominate the thinking of researchers interested in phenomena of social influence. This assertion is supported by the preponderant weight of the literature, but for purposes of illustration, only two examples need be mentioned to indicate the characteristics of this unidimensional point of view.

In their new book, Walker and Heyns (1962) provide one example wherein conformity and nonconformity are represented as opposite poles of a single dimension, with perfectly congruent normative behavior resting at one extreme and increasing magnitudes of discrepancy from this standard located at increasing distances beyond. The end of the scale labelled "nonconformity" is not defined directly, but only in terms of deviation from the former. An alternate unidimensional model is suggested by the theoretical analysis of Jahoda (1959), and by the writings of Asch (e.g.,1956). Here "independence," rather than nonconformity, is contrasted with conformity. This represents an improvement over the conceptualization of Walker and Heyns, insofar as independence has a more precise meaning than does undifferentiated nonconformity. In fact, Jahoda's model cannot be said to be incorrect, but merely insufficiently general. We shall return to this point presently.

One or the other of these unidimensional models have been employed, explicitly or implicitly, by virtually all workers in the areas of social influence and attitude change.

Both of these models speak to responses and in this sense are descriptive of behavior. That is, the concern is not with relationships between independent and dependent variables directly, but rather with a specification of the response, or dependent variable, side of the total picture. Such response models are to be contrasted with process models (e.g., Hollander, 1958; Kelman, 1961) which are primarily concerned with the processes occurring over time which can account for observed relationships between independent variables and dependent ones.

An alternate model of response has recently been suggested by Willis (1962a), and serves as the basis for the research to be reported here. According to this model, at least two dimensions are required for the construction of an adequate theoretical framework for representing conformity and non-conformity. The first of these dimensions is that of dependence-independence, while the second is that of conformity-anticonformity. These dimensions are represented as orthogonal to one another (see Figure 1).

Three basic modes of responding to felt social pressures are delineated--conformity, independence, and anticonformity. Pure conformity behavior is defined as a completely consistent attempt on the part of the individual to behave in accordance with the normative expectations of a specified group, as he sees them. Pure independence behavior occurs whenever the individual perceives relevant normative expectations, but gives zero weight to them as guides to his behavior. This

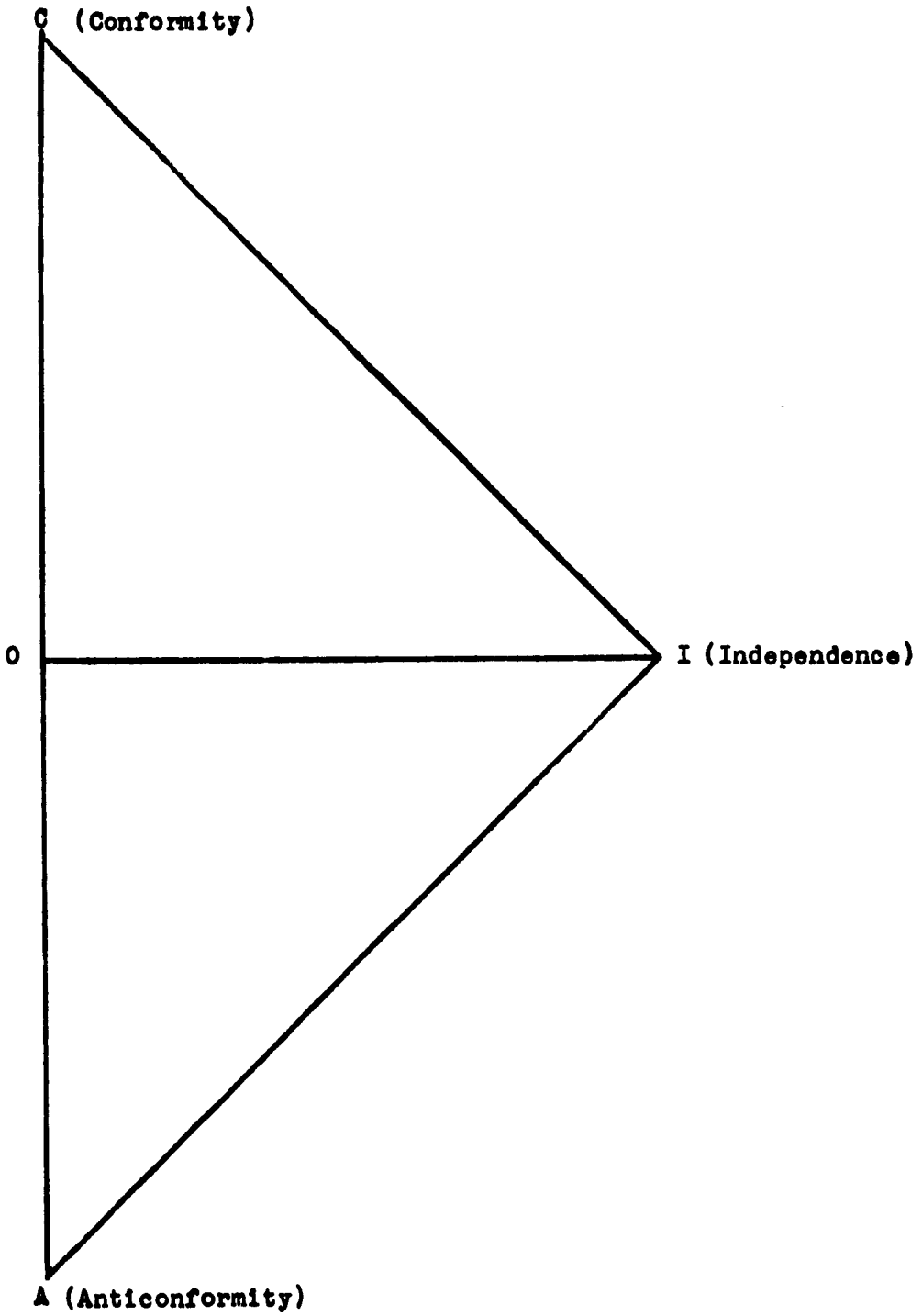

Figure 1. Relationships between conformity, independence, and anticonformity.

does not mean that the individual fails to "weigh" the expectations, in the sense of evaluating their importance and relevance, but rather that, whatever the process, he rejects them for purposes of formulating his decisions. The independent person is one capable of resisting social pressures, rather than one who is unaware of them or who merely ignores them.

In the case of pure anticonformity, the response of the individual is directly antithetical to the norm prescription. Consider the individual faced with a decision between two alternatives, one of which has been socially defined as right, the other as wrong. If the two alternatives can be considered as diametrically opposed, then choosing the one defined as wrong would exemplify pure anticonformity behavior. Pure anticonformity behavior, like pure conformity behavior, is pure dependence behavior.

In Figure 1, points C and A represent pure conformity and pure anticonformity, respectively. Point I represents pure independence behavior, while pure dependence behavior can fall anywhere along line CA. Line CI represents combinations of conformity and independence, with no trace of anticonformity. Points within Triangle CIA represent various combinations of all three response modes.

Since this model is a response model, it says nothing about the processes underlying such relationships. It deals exclusively with the kinds of reactions to felt social pressures an individual might exhibit. It is felt, however, that such a response model is essential to the definition and understanding of mechanisms underlying social influence and conformity.

Returning to the Jahoda/Asch conformity-independence model, it may now be seen to be a special case of the conformity-independence-anticonformity model. In the total absence of anticonformity, variations in behavior are restricted to differences in position along line CI. It can be concluded that while the formulation of Walker and Heyns is incorrect, that of Jahoda and Asch is merely insufficiently general.

In a previous study by Willis (1962b) perceived task competence of partner and liking for partner were manipulated in a 2 x 2 factorial design in order to determine their effects on levels of independence and net conformity. If the unidimensional model suffices, then conformity and independence are representable as opposite ends of the same continuum. This in turn would imply that an analysis of results in terms of the independence scores would be tantamount to one in terms of the net conformity scores. If, on the other hand, the model of Figure 1 is appropriate, the two analyses could yield distinctly different patternings of results. This latter result was obtained. The mean independence scores for the four experimental groups did not differ significantly from one another. This was not the case for the mean net conformity scores; there was significantly ($p < .01$) less net conformity in the low liking, low perceived task competency condition than in the high liking, high perceived task competency condition. That these two differing patterns of means were obtained constitutes evidence in support of the two-dimensional model.

Despite the support for this model in the initial experiment, responses of conformity, independence, and anti-conformity were not brought under experimental control to any appreciable degree. In none of the experimental groups did the mean location approach the limits set by the vertices of Triangle CIA. All four means fell relatively close to Line CI. Means were clustered approximately equidistant from each end of this line, but were a little nearer on the average to Point I than to Point C.

Procedure

Design: The present experiment was conceived to experimentally manipulate proximity to each vertex of the triangle in Figure 1. The strategy employed was to vary several variables at once in an attempt to maximize between group differences in location within Triangle CIA.

Subjects and experimental conditions. Subjects were 36 volunteers from lower division classes at Washington University. Of these, 12 were male and 24 were female. Four males and 8 females were randomly assigned to each of the three experimental goups. Ss in one group, the C-group, performed under conditions designed to yield a high degree of conformity behavior; Ss in the second group, the I-group, performed under conditions designed to elicit a high degree of independence behavior; and those in the third group, the A-group, performed under conditions intended to evoke a high degree of anticonformity behavior.

Stimuli and task. The stimuli for the main task were 100 lines, ranging in length from 3 to 9 inches. These were drawn on cardboard with four lines per 8 x 10 card. Under each line

appeared a numerically expressed comparison length. The task was to judge whether the line was longer or shorter than this numerical length. In actuality, each stimulus line was exactly equal to the comparison length, but Ss were told that the stimulus lines were longer half the time and shorter half the time, and that they would do well to make about an equal number of plus (longer) and minus (shorter) responses overall.

Figure 2 shows a page from the response booklet used by each S. Each booklet contained 25 pages, all alike, one for each of the stimulus cards. For each card, S made an initial binary judgment of the length of each of the four lines. These responses were recorded in the first column of the appropriate page of the booklet. A plus mark was used to indicate that the line was longer than the numerically expressed length, while the minus mark was used to indicate that the line was shorter.

After both Ss had completed the initial series of judgments for a stimulus card, E indicated in the second column of each S's response sheet the judgments that were presumably made by the partner. In actuality, these responses were predetermined according to a schedule which specified agreement and disagreement with the subject's initial judgments equally often. After these programmed responses had been indicated by E, each S had an opportunity either to change his initial responses or to reaffirm them. After each S had recorded his second set of responses in the third column, E indicated in the fourth column the responses that were presumably correct. The last column was reserved for the use of S to keep a record of the number of

	First Response	Partner's Response	Second Response	Correct Answer	Points Earned
1					
2					
3					
4					

Figure 2. Page layout of subject's response booklet.

points earned on each judgment in accordance with a reward schedule which varied from group to group.

Computation of scores. With two binary responses to each stimulus, plus an additional binary response attributed to the partner, there are eight possible outcomes on any trial. Considerations of symmetry allow these eight outcomes to be paired, yielding four distinct patterns of responding.

The first step in the computation of a subject's score was to count the frequency with which each of the four distinct response patterns appeared over all trials. These pattern frequencies are designated C, I, A and U (conformity, independence, anticonformity, and uniformity). Using a plus sign to represent a judgment of longer and a minus sign to represent one of shorter, the four response patterns can be defined in terms of the eight possible trial outcomes:

C: + - - or - + +

I: + - + or - + -

A: + + - or - - +

U: + + + or - - -

The frequencies of the C and I patterns sum to 50, and the same is true for the A and U frequencies. This is so because the half of the trials on which "the partner's response" disagrees with S's initial response yields C and I patterns, while the half of the trials on which there is agreement yields A and U patterns. Using these relations, frequencies are first converted to proportions of the maximum possible frequency. For example, if the C pattern appears 15 times and the I pattern appears 35 times, the corresponding proportions are .30 and .70.

Letting c, i, a, and u stand for the response pattern proportions, x and y are defined in the following way:

$$x = ui$$

$$y = c - a$$

These scores can be interpreted as the horizontal and vertical coordinates of S's position in Triangle CIA of Figure 1, as measured from Point O as origin. A high x-score indicates a high degree of independence, while a high y-score indicates a high degree of net conformity. A negative y-score indicates that the tendency to anticonform is greater than the tendency to conform. The logic underlying these scores is developed in Appendix A.

Experimental manipulations. Because the purpose of this experiment was to demonstrate the possibility of bringing the three response modes -- conformity, independence, and anticonformity -- under experimental control, several variables were manipulated simultaneously to maximize differences among the three experimental groups. The simultaneously manipulated variables were:

1) the perceived competency of either S or his partner in making judgments of the kind involved, as indicated by the results of the pretest,
2) the perceived competency of either S or his partner, as indicated by experimenter feedback on each trial concerning "correct" responses,

3) strength of set towards reaffirming initial judgments on second responses, and

4) reward structure.

The specific differences among experimental groups will be seen in Table 1. The pretest consisted of twenty stimulus lines of the same kind as those judged subsequently. These were presented one to a card, and each S judged the series essentially at his own rate. Judgments of longer and shorter were required in equal numbers. Answer sheets were then sham-scored by E and predetermined results were reported to Ss. In the C-group, each S was informed that his partner had judged 18 of the 20 stimuli correctly. In the I-group, each S was told that he himself had received a score of 18. In the A-group, each S was led to believe that his partner had scored only 3 correct on the pretest.

In both the C-group and the A-group, instructions included a statement to the effect that Ss would be able to do better by adopting a flexible attitude which allowed the recognition and correction of mistakes, while the instructions for the I-group stressed that it would be better to trust one's initial reaction, when in doubt.

Experimenter feedback was programmed in the C-group so as to make the partner appear to be correct in his judgments 90 per cent of the time, while in the I-group, it was S himself who was presented as being correct 90 per cent of the time. The partner was allowed to appear correct on only 10 per cent of the trials in the A-group.

TABLE 1

Summary of experimental manipulations

	C-Group	I-Group	A-Group
Performance on Pre-test	Partner: 18 out of 20	Subject: 18 out of 20	Partner: 3 out of 20
Set	Flexibility	Consistency	Flexibility
Feedback	Partner correct 90%	Subject correct 90%	Partner correct 10%
Reward Structure	S wrong: 0 S only right: 1 Both right: 2 ea. (team score)	S wrong: 0 S right: 1 (no comparison)	S wrong: 0 Both right: 1 ea. S only right: 2 (competition)

The simplest reward structure was that for the I-group. S received one point for every correct second judgment, and nothing for every incorrect second judgment. The object was for S to get as many points as he could. In the C-group, S received two points for every correct second response only in the event that his partner's response was also correct, and one point for every correct second response if his partner's response was incorrect. Furthermore, all points won by S and his partner were to be pooled at the end of the experimental session into a single team score.

In the A-group, S was under the impression that both he and his partner each received one point in the event that they both judged a stimulus correctly, but that if one were correct and the other incorrect, the former would receive two points. Instructions further emphasized that the object for S was to get more points than his partner.

Results

As will be seen in Table 2, the three experimental groups differ, both with respect to x-scores (independence) and y-scores (net conformity). Analysis of variance indicates that both sets of means differ significantly among themselves. For the x-scores, the F ratio is 16.79, while that for the y-scores is 22.36, each with 2/33 degrees of freedom. Both of these values are significant considerably beyond the .001 level.

Duncan range tests (Duncan, 1955; Edwards, 1960, pp.136-140) were employed to test the significance of differences between adjacent means. The x-means for the C and A groups differ significantly at the .05 level, while the corresponding difference between the I and A groups is significant at the .005 level.

TABLE 2

Group means for independence

(x-scores) and anticonformity (y-scores).

	C	I	A
X	.438	.905	.631
Y	.542	.075	-.141

TABLE 3

Group means by blocks of 20 trials

		I	II	III	IV	V	Move ment
C	x	.598	.433	.450	.300	.372	.226
	y	.337	.567	.534	.701	.601	.264
I	x	.830	.924	.910	.926	.959	.129
	y	.121	.076	.075	.058	.028	.093
A	x	.717	.608	.666	.641	.587	.130
	y	.074	-.072	-.075	-.317	-.301	.375

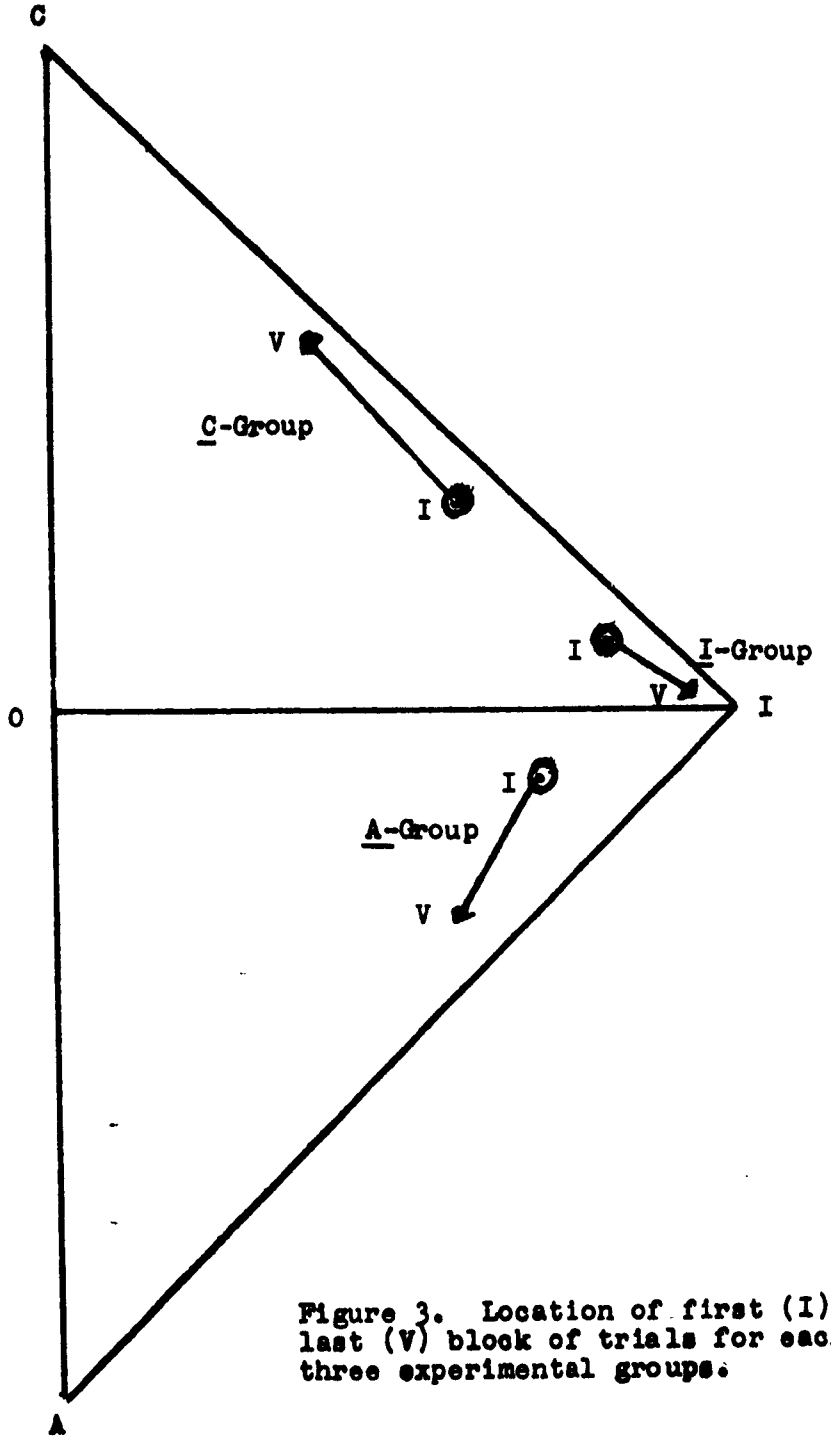

Figure 3. Location of first (I) and last (V) block of trials for each of three experimental groups.

The difference between the C and I groups is significant at the .001 level.

Application of the Duncan test to differences between overall y-means also revealed each to be significantly different from the others. The difference between the I and A group means is significant at the .05 level, that between the C and I groups at the .001 level, and that between the C and A groups at the .001 level.

Table 3 presents independence and net conformity means for each experimental group by blocks of twenty trials. The trends are, by and large, rather consistent. The I-group is highly independent during the first block of trials, and becomes even more so on successive blocks of trials. Both of the other groups show a tendency to become more dependent over blocks of trials. As anticipated, the C-group shows a strong tendency towards increasing conformity as trials progress. Also as anticipated, the A-group exhibits considerable movement along the y-axis in the direction of anti-conformity. An incidental observation is that the I-group shows a little movement in the direction of less net conformity.

Mean movement scores are shown in the last column of Table 3. The x-movement score for a group was computed by subtracting the x-score on the first block of trials from that on the last block of trials. The y-movement scores were computed in an analogous manner.

Movement scores were tested by means of t tests. The C-group was the only one which showed a significant amount of movement along the x-axis; with a t equal to 2.33, and 11 degrees of freedom, this is significant at the .05 level.

Both the C- and the A-groups showed a significant degree of movement along the y-axis, and in opposite directions, with respective values of t of 2.55 and 2.59 (df = 11), significant at the .05 level.

Perhaps the clearest statistical indication of the success of the experimental manipulations is that based on the differences among final positions, i.e., the means on the last block of trials. Analysis of variance applied to the mean x-score differences yielded an F ratio of 13.17, df = 2/33, which is significant beyond the .001 level. A Duncan range test indicated that neither the difference in x-means between the C- and A-groups, nor that between the I- and A-groups, was significant. However, the C- and I-groups differed significantly at the .005 level.

As for final differences in mean y-scores, the F ratio is 22.35 (df = 2/33; $p < .001$), and a Duncan range test showed that all pairs of means differ significantly from one another. That between the I- and A-groups differ significantly at the .05 level, while the two remaining differences are both significant at the .001 level.

Although it is not possible to determine the effects of each independent variable separately, it is possible to divide the four independent variables into two groups of two each on the basis of producing initial differences between groups, or producing differential movement effects. Experimenter feedback and reward structure can be assumed to be responsible for movement effect, while the pretest and set (flexibility vs. consistency) can be assumed to account for much of the difference between groups observed during the first block of trials.

A short questionnaire was administered to each S immediately after the experimental session. The items, together with mean responses to the multiple-choice items for each of the experimental groups, are presented in Appendix B. In general, the patterning of the differences between groups is in accordance with expectations.

In particular, examination of the answers to the last question, inquiring as to the purpose of the experiment, disclosed that a majority of Ss were aware of the fact that the experiment dealt with the influence partners' responses might have on second judgments. Few Ss appeared to have achieved more specific insights into the nature of the experiment.

Responses given by Ss in the A-group to question 4 merit particular attention. Mean y-scores for Ss in each response category on this question are given in Table 4, along with category frequencies. There is a pronounced tendency for judgments that the partner was extremely helpful to be associated with a high level of anticonformity. This finding supports the interpretation that Ss failing to show appreciable anticonformity in the A-group were those who failed to solve the problem of utilizing the information made available to them through the responses attributed to partners.

TABLE 4

Mean net conformity scores for Ss checking each response category on Question 4: "How much help was your partner to you in making your judgments?"

Response	f	y
a. extremely helpful	4	-.58
b. fairly helpful	-	-
c. about average	1	.12
d. no help at all	6	.05
e. worse than no help at all	1	.20

Discussion

The findings warrant the conclusion that the experimental manipulations were in fact successful in producing the three basic reactions specified by the theoretical framework. This is important inasmuch as it demonstrates that these response modes can be brought under experimental control with the techniques which have been developed to date.

It should be noted, however, that in the cases of conformity and anticonformity reactions, the theoretical maxima were not closely approached. On the other hand, the theoretical limit was almost attained in the case of the independence reaction, largely because this mode of behavior was quite pronounced during the first block of trials in the relevant experimental group.

The significance of this experiment resides in the fact that it demonstrates the possibility of evoking in considerable strength the three modes of reaction specified by the conceptual framework employed. While the earlier experiment demonstrated small, through statistically significant, differences relative to the theoretical limits, this experiment obtained differences between groups which were substantial relative to the theoretical limits. If not only conformity and independence behavior, but anticonformity as well, can be produced in a laboratory setting, the path is cleared for a systematic exploration of the antecedent conditions associated with the various combinations of each.

These results support the two-dimensional model as a more adequate discription of behavior than the unidimensional conceptualizations mentioned earlier. Also, the findings of the present experiment shed light on the relationship between the perception of competence and the acceptance of influences, previously studied experimentally in Hollander (1960). A distinction is evident, however, between this process and the associated considerations of how conformity, anticonformity, and independence are perceived and responded to in interaction over time. An experiment on this last issue is presently being conducted by the authors.

Summary

A test is provided of a conceptual framework, developed by Willis, which specifies three response modes in a social influence situation. These are referred to as conformity, independence, and anticonformity. An individual can exhibit, over the course of several trials, any combination of independence or net conformity, i.e., conformity minus anticonformity.

The object of this experiment was to manipulate simultaneously a number of independent variables so as to elicit one of the three basic modes of reacting from each of the three experimental groups. Conditions for one group were designed to maximize conformity, those of the second to maximize independence, and those of the third to maximize anticonformity. The prediction that these reactions can be brought under experimental control and can be substantially and differentially produced in the laboratory was confirmed. Differences among experimental groups

were sizeable as measured either by overall differences in independence and net conformity or by movement scores. In the case of the condition designed to maximize independence behavior, the theoretical limit was closely approached. For the conformity and anticonformity groups, the respective limits were less closely approached, but magnitudes of movement towards these limits were larger than in the case of the independence group.

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Willis, R. H. Conformity, independence, and anticonformity. Unpublished manuscript, 1962. (a)

Willis, R. H. Two dimensions of conformity-nonconformity. Unpublished manuscript, 1962. (b)

Appendix A

Derivation of Scores

As a first consideration in the derivation of the X and Y scores, consider two restrictions on the distribution of response patterns. First, the sum of frequencies for U and A equal the number of trials on which the model agrees with the initial responses of the subject. Second, the sum of frequencies for C and I equal the number of trials on which the model disagrees with the initial responses of the subject. Therefore, if frequencies U, A, C, and I are converted into proportions of maximum possible frequencies (designated u, a, c, and i), it follows that $u + a = 1$, and $c + i = 1$.

Now consider an "obvious" method of computing scores. Let the independence score be equal to i and the net conformity score equal to $c - a$. These equations seem plausible enough at first glance. Still, on reflection one might wonder why the proportion u does not appear in either of them, since each of the four response patterns has the same logical status.

A more specific (and less visceral) objection is that these equations do not yield the relationships required by the conceptual framework. For example, consider a subject who invariably disagrees on his second response with the response given by the model. Such behavior, which would be described as pure anticonformity behavior, produces the following proportions: $u = .00$, $a = 1.00$, $c = .00$, and $i = 1.00$. Applying the above equations yields a net conformity score of -1.00 and an independence score of 1.00. The subject shows maximal anticonformity, but, at the same time, maximal independence! This is in contradiction to

the conceptual framework, and, in fact, there is no place in Figure 1 for such a combination of scores.

In order to derive a more satisfactory set of scoring formulas, it is convenient to introduce the concept of boundary strategies. One such boundary strategy has just been described, that of always disagreeing with the model's response. There are three other such boundary strategies whereby the subject can determine his second response--always agreeing with the model, always agreeing with his initial response, and always disagreeing with his initial response. The relationships between these boundary strategies, the distribution of response patterns, and locations in Figure 1 are as follows:

Strategy	Condition	Response Patterns	Location
S_c	$s_2 = m$	C and U	Point C
S_i	$s_2 = s_1$	I and U	Point I
S_a	$s_2 \neq m$	A and I	Point A
S_o	$s_2 \neq s_1$	C and A	Point O

The assignments of locations in Figure 1 are based on psychological considerations. For example, if the subject invariably agrees with the model, this is clearly interpretable as pure conformity behavior, and assignment to Point C is consequently made. Similarly, always agreeing with one's initial response and always disagreeing with the model are interpretable, respectively, as pure independence behavior and pure anticonformity behavior. Points I and A are accordingly assigned.

Boundary strategy S_o is a bit special. One interpretation is that of self-anticonformity, or inconsistency, since the

subject insists on disagreeing with his initial response at every opportunity. The liklihood of such a motive operating with any force seems remote, however. An alternate interpretation is to consider this kind of behavior as an equal mixture of conformity and anticonformity, since it leads to an equal proportion of patterns C and A. This suggests that such behavior be located midway along line CA, at Point O.

Granted that the four boundary strategies correspond to Points C, I A and O, how are intermediate cases to be dealt with? Consider the case in which no patterns of type A occur. This implies a = 0 and u = 1; as always, c + i = 1. Since points C and I both correspond to u = 1, it is reasonable to locate cases for which a = 0 and u = 1 along line CI at a distance from C proportionate to the magnitude of i. This is represented by point U in Figure 3. Similarly, cases for which a = 1 and u = 0 are located between points O and A at a distance from O proportionate to the magnitude of i. This appears as point V in Figure 3. In brief, the magnitude of i (or c, which is 1 - i) determines the line UV. Cases for which $0<u<1$, or for which $1>a>0$, can be located along line UV at a distance from U proportionate to the magnitude of a. This general case is labelled P(x,y) in Figure 3. It remains to express the coordinates of P, x and y, algebraically.

Letting the distance from the origin at O to any vertex equal unity, OV = i. This follows from the rule for locating V. Construct WU, parallel to OI. From the rule for locating U, $CU/CI = CU/\sqrt{2} = i$. It can furthermore be shown that the triangle CWU is isoceles, and thus CW = WU = i. Therefore WV = 1, and

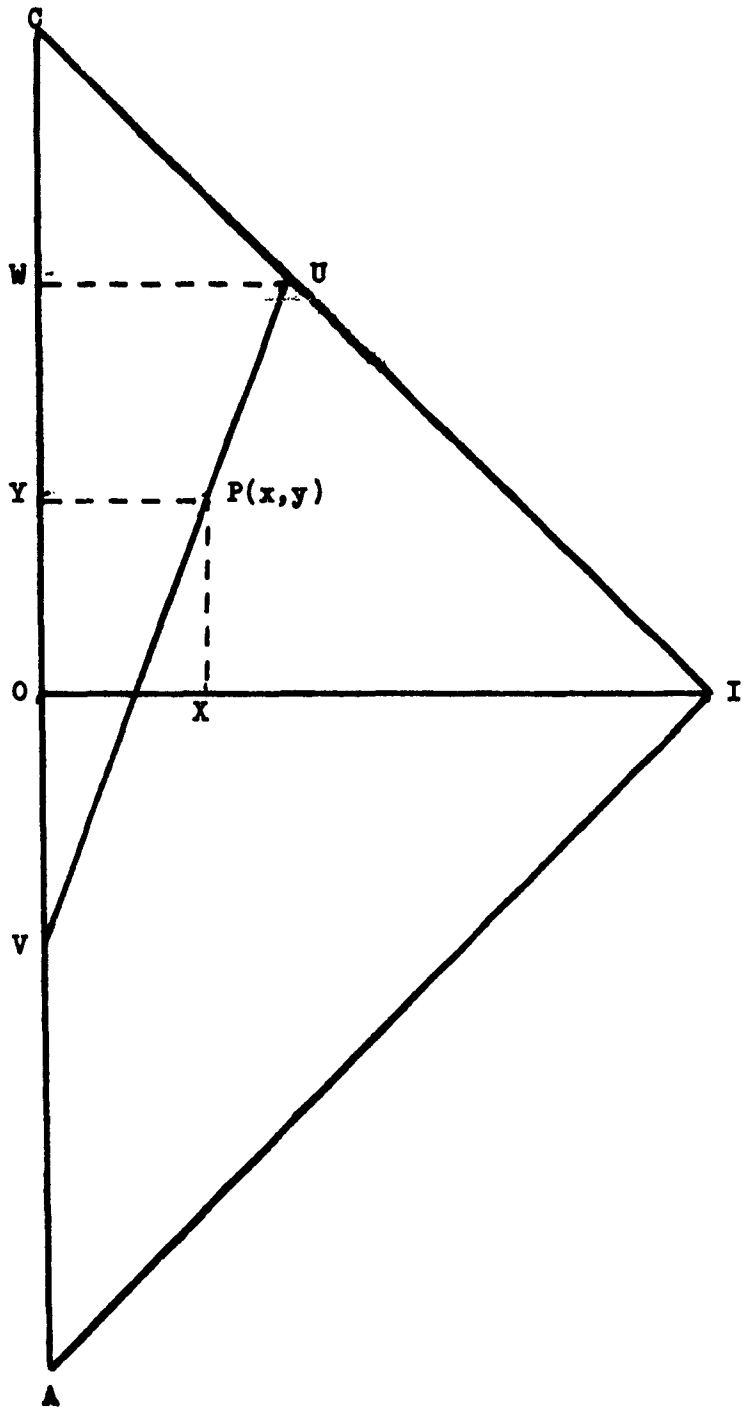

Figure 4.

$\underline{UV} = \sqrt{1^2 + i^2}$. From the procedure for locating $\underline{P}$ $(\underline{x},\underline{y})$ along $\underline{UV}$, $\underline{VP} = u\sqrt{1^2 + i^2}$. By similar triangles, $\underline{YP}/\underline{UW} = u\sqrt{1^2 + i^2} / \sqrt{1^2 + i^2}$, or $\underline{x}/\underline{i} = \underline{u}$. Consequently,

$$\underline{x} = \underline{ui} \qquad [1]$$

By the Pythagorean theorem, $\underline{VY}^2 = \underline{u}^2 (1^2 + \underline{i}^2) - u^2 i^2 = u^2$. Therefore, $\underline{VY} = \underline{u}$, and $\underline{y} = \underline{u} - \underline{i}$. Because $\underline{u} = 1\text{-}a$, and $\underline{i} = 1 - \underline{c}$, this can be re-written as

$$\underline{Y} = \underline{c} - \underline{a}. \qquad [2]$$

Formula [2] is identical with the "obvious" formula for net conformity considered above, but formula [1], for the independence score, has acquired a $\underline{u}$ as a coefficient. The revised formulas not only give $\underline{u}$ a role equally prominent to those given the proportions for the other response patterns (thus pleasing symmetrophiles), but they also yield the relationships required by the conceptual framework. Consider again the subject who caused so much trouble above by invariably disagreeing with the response of the model. His net conformity score is still -1.00, but his independence score, by formula [1], is zero. There is now a place for this subject in the triangle CIA, namely at point A.

The changing slope of $\underline{UV}$ is of significance. When $\underline{c} = 1$ and $\underline{i} = 0$, the slope of $\underline{UV}$ is positive infinity. This means that response patterns of type U are, in effect, interpreted as indicative of pure conformity, for an increase in $\underline{u}$ produces an equal increase in $\underline{y}$. Conversely, type A response patterns are interpreted as indicative of pure anticonformity, and an increase in $\underline{a}$ results in an equal decrease in $\underline{y}$. The value of $\underline{x}$ remains constant at zero. At the other extreme, when $\underline{c} = 0$ and $\underline{i} = 1$,

the slope of UV is +1. Now each occurrence of the type U response pattern increments x and y equally. The type U pattern is interpreted psychologically as representing an equal mixture of conformity and independence behaviors. Response patterns of type A are now taken as equally indicative of anticonformity and dependence behaviors, for an increase in a produces equal decrements of x and y.

It is also possible to demonstrate that response patterns of type C and I affect the x and y scores in a variable manner, depending upon the relative frequencies of u and a. This can be done by deriving the equations for x and y in an alternate way. A point S is located on CO at a distance from C proportionate to a, and a point T is located on IA at a distance from I also proportionate to a. P (x,y) is then located on line ST at a distance from S proportionate to i. (ST is not shown in Figure 3. Considerations of symmetry make it clear that the equations for x and y will be the same as those found by the first method.

When u = 0 and a = 1, the slope of line ST will be negative infinity. Then type C response patterns will contribute positively to the y score, while type I patterns will diminish the value of y. Neither pattern will have any effect on the x score, which remains equal to 1. When u = 1 and a = 0, type C patterns will contribute equally to x and y, while type I patterns will diminish both scores equally.

A careful consideration of the interdependencies between u and a on the one hand and c and i on the other leads to the conclusion that the assumptions underlying equations [1] and [2] are quite tenable from a psychological point of view.

Appendix B

The Post-Experimental Questionnaire

	* Mean Response		
	C-group	I-group	A-group
1. How accurate do you think you were on your <u>initial</u> judgements?. . . . . a. extremely accurate b. fairly accurate c. about average d. fairly inaccurate e. extremely inaccurate	3.67	1.92	2.67
2. How accurate do you think you were on your <u>second</u> judgements?. . . . . a. extremely accurate b. fairly accurate c. about average d. fairly inaccurate e. extremely inaccurate	2.17	2.08	2.50
3. How accurate do you think your partner was on his initial judgements?. . . a. extremely accurate b. fairly accurate c. about average d. fairly inaccurate e. extremely inaccurate	1.17	3.00	4.09
4. How much help was your partner to you in making your judgements?. . . . . a. extremely helpful b. fairly helpful c. slightly helpful d. no help at all e. worse than no help at all	1.62	4.00	3.00
5. How confident were you during the experiment of your judgements?. . . a. extremely confident b. fairly confident c. slightly confident d. not confident at all e. felt I was doing worse than chance	3.42	2.75	2.50
6. Do you think you did better or worse than your partner?. . . . . a. much better b. a little better c. the same d. a little worse e. much worse	4.00	2.00	1.92

* Response categories <u>a</u> through <u>e</u> scored <u>1</u> through <u>5</u> in all cases.

Appendix B Cont'd. . . .

	* Mean Response		
	C-group	I-group	A-group
7. How well do you think your team did?.	2.00	- -	- -
a. much better than average			
b. a little better than average			
c. just average			
d. a little worse than average			
e. much worse than average			
8. How would you describe the general purpose of this experiment? (25-50 words)			

* Response categories a through e scored 1 through 5 in all cases.